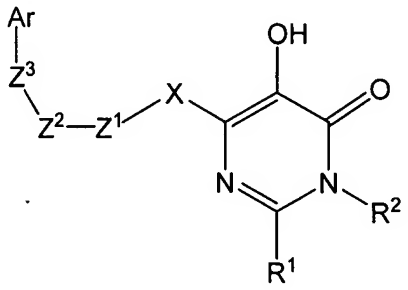
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the present application.

1. (**Currently Amended**) A compound of the formula:

[Formula 1]

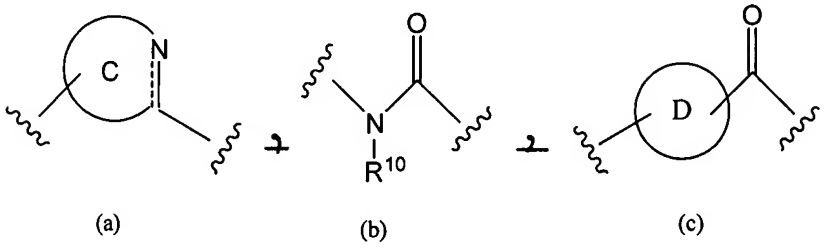


(I)

(wherein:

X represents either one of the following groups:

[Formula 2]



(a) (b) (c)

(wherein, C ring is nitrogen-containing aromatic heterocyclic ring in which at least one of atoms neighboring the atom bound to the pyrimidine ring is unsubstituted nitrogen atom; R^{10} is hydrogen or

lower alkyl; D ring is aryl or heteroaryl, wherein "heteroaryl" means a monocyclic aromatic heterocyclic group and a condensed aromatic heterocyclic group, said monocyclic aromatic heterocyclic group means a group, which is derived from a 5- to 8-membered aromatic ring which may contain 1 to 4 of oxygen atom, sulfur atom, and/or nitrogen atom and which may have a bonding position at any substitutable position, said condensed aromatic heterocyclic group means a group, wherein a 5- to 8-membered aromatic ring which may contain 1 to 4 of oxygen atom, sulfur atom, and/or nitrogen atom is condensed with 1 to 4 of 5- to 8-membered aromatic carbon cycle or the other 5- to 8-membered aromatic heterocyclic ring and which may have a bonding position at the any substitutable position)

Z^1 and Z^3 each is ~~independently~~ a single bond~~, O, S, S (=O) or SO_2~~;

Z^2 is ~~a single bond,~~ lower alkylene~~ or lower alkenylene~~;

Ar is ~~optionally substituted~~ aryl [[or]] optionally substituted ~~heteroaryl~~ with halogen;

R^1 is lower alkyl, substituted lower alkyl, optionally substituted cycloalkyl, optionally substituted cycloalkyl lower alkyl, optionally substituted aryl, optionally substituted aralkyl, optionally substituted heterocyclic group, or optionally substituted heterocyclic lower alkyl;

R^2 is a hydrogen atom or optionally substituted lower alkyl; or

R^1 and R^2 may form, together with an adjacent atom, an optionally substituted heterocyclic ring,

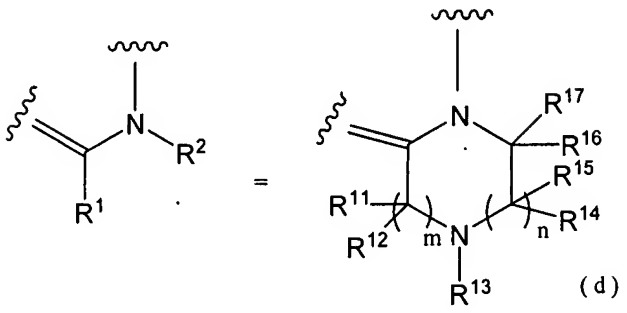
provided that

1) when X is a group shown by (a), R^1 is not lower alkyl

2) when X is a group shown by (b), R^1 and R^2 form, together with an adjacent atom, a heterocyclic

ring shown by the (d) as follows:

[Formula 3]



(d)

(wherein, R^{11}, R^{12}, R^{14}, R^{15}, R^{16}, and R^{17} each is independently hydrogen, optionally substituted lower alkyl, optionally substituted aryl, optionally substituted heteroaryl, optionally substituted amino, optionally substituted hydroxy, optionally substituted thiol, optionally substituted sulfonyl[[,]] ~~optionally substituted aminosulfonyl,~~ or optionally substituted carbamoyl, or

R^{11} and R^{12}, R^{14} and R^{15}, and R^{16} and R^{17} may together form "=O";

R^{13} is hydrogen, optionally substituted lower alkyl, optionally substituted lower alkylcarbonyl, optionally substituted lower alkylsulfonyl, optionally substituted carbamoyl, optionally substituted arylcarbonyl, optionally substituted aralkyl, optionally substituted heteroaralkyl, or optionally substituted heteroarylcarbonyl;

m is 0, 1, 2 or 3; n is 0, 1, 2 or 3; provided that $1 \leq m+n \leq 3$)), a pharmaceutically acceptable salt or ~~a solvate~~ an alcoholate or hydrate thereof,

wherein "optionally substituted" means substituted by hydroxy, carboxy, halogen, halo alkyl, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, alkoxy, alkenyloxy, alkoxycarbonyl, nitro, nitroso,

alkylamino, acylamino, aralkylamino, azide, aryl, aralkyl, cyano, isocyano, isocyanato, thiocyanato, isothiocyanato, mercapto, alkylthio, alkylsulfonyl, alkylcarbamoyl, sulfamoyl, acyl, formyloxy, haloformyl, oxalo, thioformyl, thiocarboxy, dithiocarboxy, thiocarbamoyl, sulfino, sulfo, sulfoamino, hydrazino, ureide, amidino, guanidine, phthalimide, oxo, and heterocyclic ring,

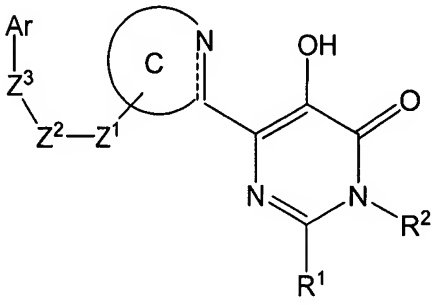
wherein "optionally substituted amino" and "optionally substituted carbamoyl" mean substituted by alkyl, benzyl, carbamoylalkyl, mono or di alkylcarbamoyl alkyl, hydroxyalkyl, heterocycle alkyl, alkoxycarbonyl alkyl, mono or di alkylamino alkyl, alkoxyalkyl, acyl, arylcarbonyl, aralkyl, hydroxy, alkyl sulfonyl, arylsulfonyl optionally substituted with alkyl or halogen, cycloalkyl, aryl optionally substituted with alkyl, alkylamino sulfonyl, alkylaminocarbonyl, alkoxycarbonyl, cycloalkylcarbonyl, sulfamoyl, alkyl carbonylamino, heterocycle and amino.

2. (**Currently Amended**) The compound according to claim 1, wherein ~~Z^1 is a single bond or O; Z^2 is a single bond or lower alkylene; Z^3 is a single bond; and~~ Ar is ~~optionally substituted~~ phenyl optionally substituted with halogen, a pharmaceutically acceptable salt or ~~a solvate~~ an alcoholate or hydrate thereof.

3. (**Currently Amended**) The compound according to claim 2, wherein -Z^1-Z^2-Z^3-Ar is 4-fluorobenzyl, a pharmaceutically acceptable salt or ~~a solvate~~ an alcoholate or hydrate thereof.

4. (**Currently Amended**) The compound according to claim 1 represented by the formula:

[Formula 4]

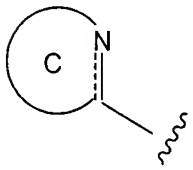


(I-a)

(wherein each symbol has the same meanings as claim 1), a pharmaceutically acceptable salt or ~~a solvate~~ an alcoholate or hydrate thereof.

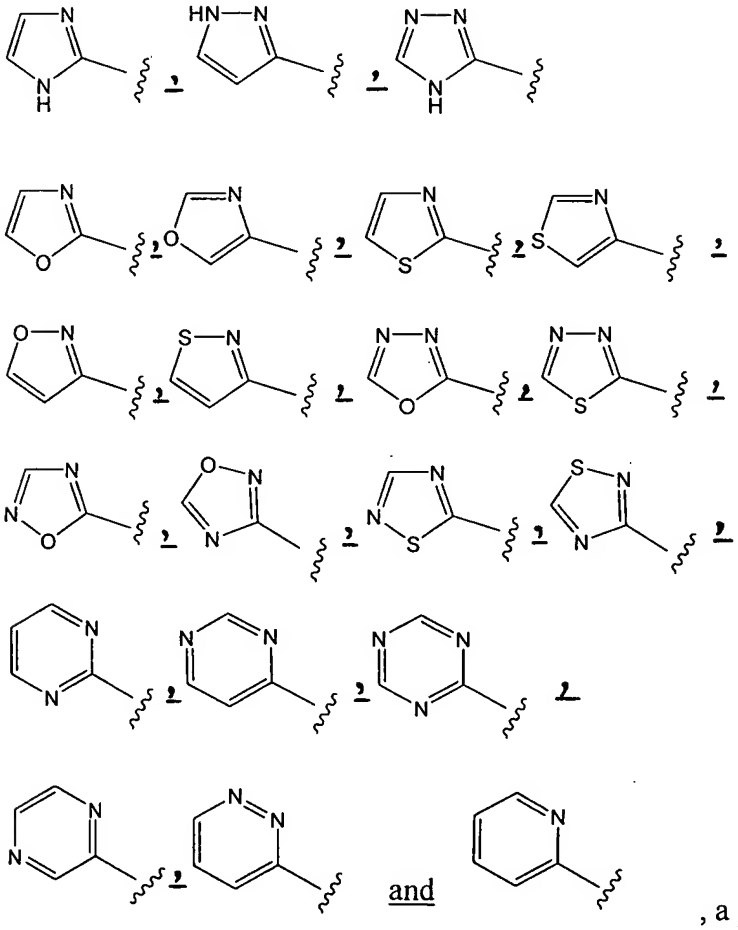
5. **(Currently Amended)** The compound according to claim 4, wherein C ring represented by the formula:

[Formula 5]



is selected from the group consisting of:

[Formula 6]

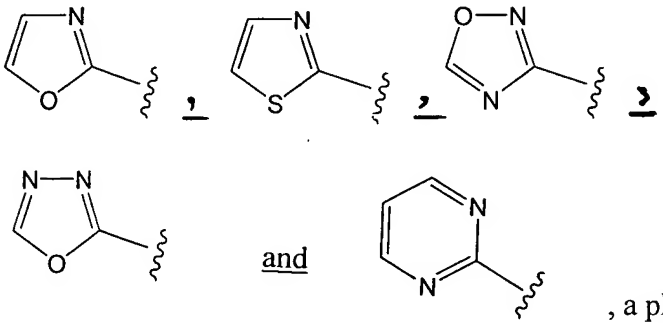


and

, a pharmaceutically acceptable salt or ~~a-solvate~~ an alcoholate or hydrate thereof.

6. (**Currently Amended**) The compound according to claim 5, wherein C ring is selected from the group consisting of:

[Formula 7]



and

, a pharmaceutically acceptable salt or ~~a solvate~~ an alcoholate or hydrate thereof.

7. (**Currently Amended**) The compound according to claim 1, wherein R^1 is substituted lower alkyl, optionally substituted cycloalkyl, optionally substituted aralkyl, optionally substituted heterocyclic lower alkyl, optionally substituted aryl or optionally substituted heterocyclic group, and each substituent is selected from the group consisting of $-NR^3R^4$, -C (=O)R^3, -C (=O)NR^3R^4 (wherein, R^3 and R^4 each is independently , hydrogen atom, hydroxy, alkoxy, optionally substituted aryloxy, optionally substituted aralkyloxy, optionally substituted amino, ~~optionally substituted alkyl,~~ optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heterocyclic group, optionally substituted aralkyl, optionally substituted heteroaralkyl, optionally substituted lower alkylcarbonyl, optionally substituted arylcarbonyl, optionally substituted heteroarylcarbonyl,

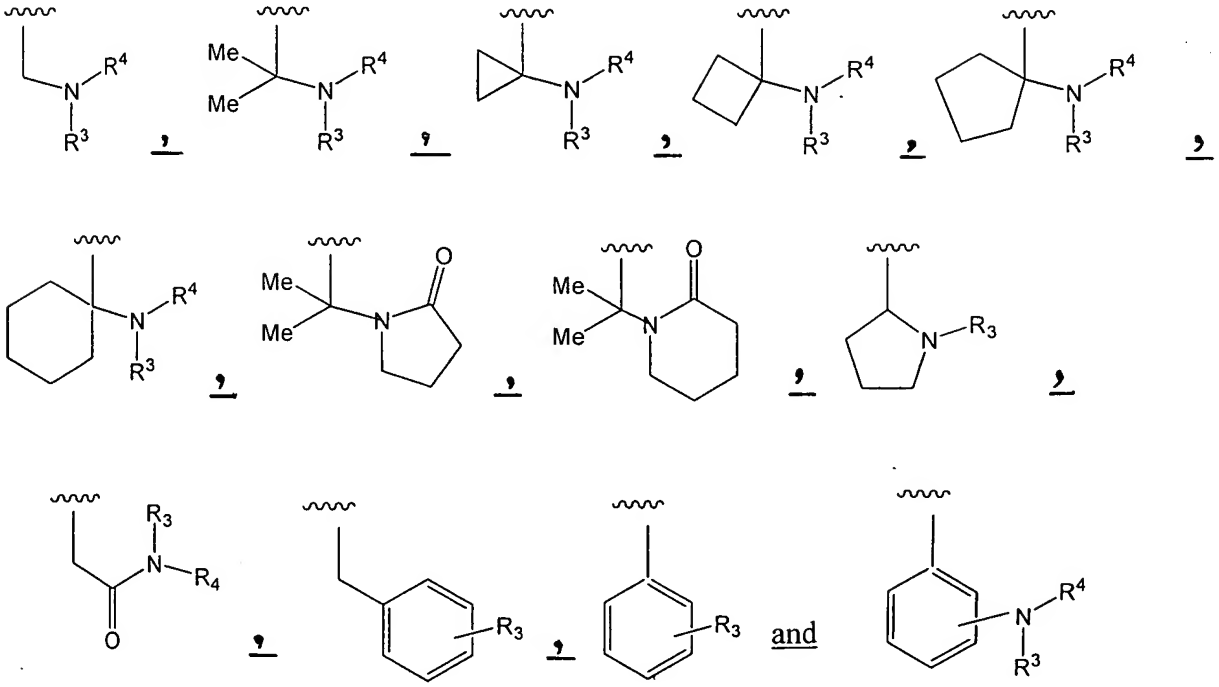
optionally substituted carbamoyl, optionally substituted carbamoylcarbonyl, lower alkoxycarbonylcarbonyl, carboxycarbonyl, lower alkoxycarbonyl, optionally substituted heterocyclic carbonyl, lower alkylsulfonyl, optionally substituted arylsulfonyl, optionally substituted heteroarylsulfonyl, or optionally substituted lower alkylsulfonyl), oxo and halogen, a pharmaceutically acceptable salt or ~~a solvate~~ an alcoholate or hydrate thereof,

wherein "optionally substituted" means substituted by hydroxy, carboxy, halogen, halo alkyl, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, alkoxy, alkenyloxy, alkoxycarbonyl, nitro, nitroso, alkylamino, acylamino, aralkylamino, azide, aryl, aralkyl, cyano, isocyano, isocyanato, thiocyanato, isothiocyanato, mercapto, alkylthio, alkylsulfonyl, alkylcarbamoyl, sulfamoyl, acyl, formyloxy, haloformyl, oxalo, thioformyl, thiocarboxy, dithiocarboxy, thiocarbamoyl, sulfino, sulfo, sulfoamino, hydrazino, ureide, amidino, guanidine, phthalimide, oxo, and heterocyclic ring,

wherein "optionally substituted amino," "optionally substituted carbamoyl" and "optionally substituted carbamoylcarbonyl" mean substituted by alkyl, benzyl, carbamoylalkyl, mono or di alkylcarbamoyl alkyl, hydroxyalkyl, heterocycle alkyl, alkoxycarbonyl alkyl, mono or di alkylamino alkyl, alkoxyalkyl, acyl, arylcarbonyl, aralkyl, hydroxy, alkyl sulfonyl, arylsulfonyl optionally substituted with alkyl or halogen, cycloalkyl, aryl optionally substituted with alkyl, alkylamino sulfonyl, alkylaminocarbonyl, alkoxycarbonyl, cycloalkylcarbonyl, sulfamoyl, alkyl carbonylamino, heterocycle and amino.

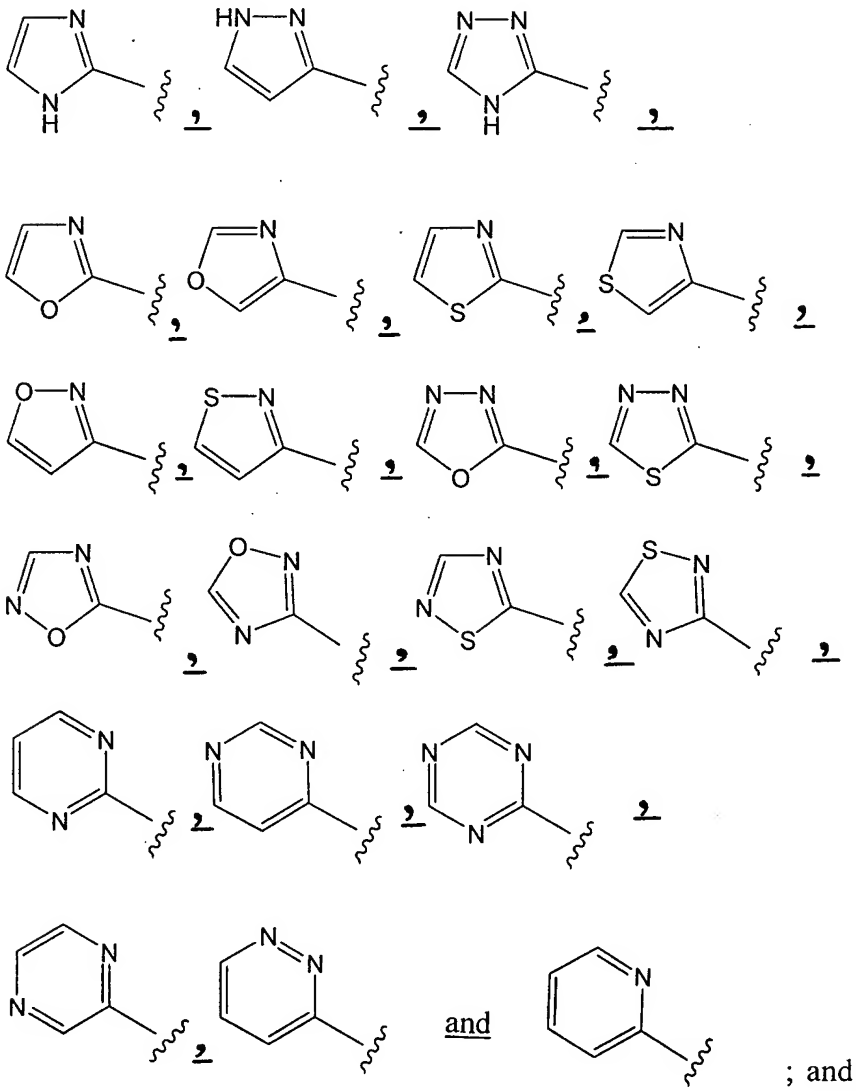
8. (**Currently Amended**) The compound according to claim 1, wherein R^1 is a group selected from the group consisting of:

[Formula 8]



(wherein, R^3 and R^4 are the same meanings as above), a pharmaceutically acceptable salt or a ~~solvate~~ an alcoholate or hydrate thereof.

9. (**Currently Amended**) The compound according to claim 1, wherein ~~Z^1 is a single bond or O; Z^2 is a single bond or lower alkylene; Z^3 is a single bond;~~ Ar is ~~optionally substituted~~ phenyl optionally substituted with halogen; X is a group represented by (a); C ring is a group selected from the group consisting of:



and

; and R^1 is substituted lower alkyl,

optionally substituted cycloalkyl, optionally substituted aralkyl, optionally substituted heterocyclic lower alkyl, optionally substituted aryl or optionally substituted heterocyclic group, and each substituent is selected from the group consisting of $-NR^3R^4$, $-C(=O)R^3$, $-C(=O)NR^3R^4$ (wherein, R^3 and R^4 each is independently, hydrogen atom, hydroxy, alkoxy, optionally substituted aryloxy, optionally substituted aralkyloxy, optionally substituted amino, ~~optionally substituted alkyl,~~ optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heterocyclic group, optionally substituted aralkyl, optionally substituted heteroaralkyl, optionally substituted lower alkylcarbonyl, optionally substituted arylcarbonyl, optionally substituted heteroarylcarbonyl, optionally substituted carbamoyl, optionally substituted carbamoylcarbonyl, lower alkoxycarbonylcarbonyl, carboxycarbonyl, lower alkoxycarbonyl, optionally substituted heterocyclic carbonyl, lower alkylsulfonyl, optionally substituted arylsulfonyl, optionally substituted heteroarylsulfonyl, or optionally substituted lower alkylsulfonyl), oxo and halogen, a pharmaceutically acceptable salt or ~~a solvate~~ an alcoholate or hydrate thereof,

wherein "optionally substituted" means substituted by hydroxy, carboxy, halogen, halo alkyl, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, alkoxy, alkenyloxy, alkoxycarbonyl, nitro, nitroso, alkylamino, acylamino, aralkylamino, azide, aryl, aralkyl, cyano, isocyano, isocyanato, thiocyanato, isothiocyanato, mercapto, alkylthio, alkylsulfonyl, alkylcarbamoyl, sulfamoyl, acyl, formyloxy, haloformyl, oxalo, thioformyl, thiocarboxy, dithiocarboxy, thiocarbamoyl, sulfino, sulfo, sulfoamino, hydrazino, ureide, amidino, guanidine, phthalimide, oxo, and heterocyclic ring,

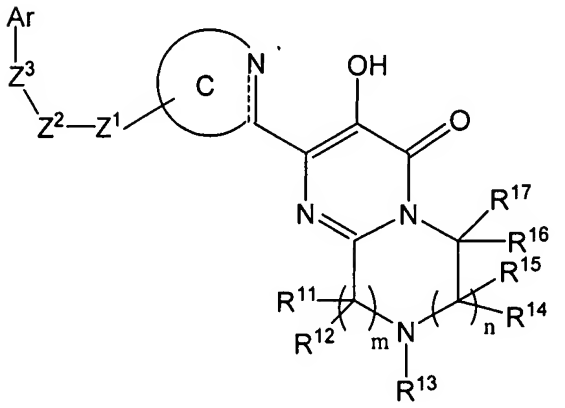
wherein "optionally substituted amino," "optionally substituted carbamoyl" and "optionally

substituted carbamoylcarbonyl" mean substituted by alkyl, benzyl, carbamoylalkyl, mono or di alkylcarbamoyl alkyl, hydroxyalkyl, heterocycle alkyl, alkoxycarbonyl alkyl, mono or di alkylamino alkyl, alkoxyalkyl, acyl, arylcarbonyl, aralkyl, hydroxy, alkyl sulfonyl, arylsulfonyl optionally substituted with alkyl or halogen, cycloalkyl, aryl optionally substituted with alkyl, alkylamino sulfonyl, alkylaminocarbonyl, alkoxycarbonyl, cycloalkylcarbonyl, sulfamoyl, alkyl carbonylamino, heterocycle and amino.

10. (**Withdrawn**) The compound according to claim 4, wherein X is a group represented by (a); R^1 and R^2 form, together with an adjacent atom, an optionally substituted heterocyclic ring, a pharmaceutically acceptable salt or a solvate thereof.

11. (**Withdrawn**) The compound according to claim 4 of the formula:

[Formula 9]



(I-a-1)

(wherein, C ring is nitrogen-containing aromatic heterocyclic ring in which at least one of atoms neighboring the atom bound to the pyrimidine ring is unsubstituted nitrogen atom;

Z^1 and Z^3 each is independently a single bond, O, S, S (=O) or SO_2;

Z^2 is a single bond, lower alkylene or lower alkenylene;

Ar is optionally substituted aryl or optionally substituted heteroaryl;

R^{11}, R^{12}, R^{14}, R^{15}, R^{16}, and R^{17} each is independently hydrogen, optionally substituted lower alkyl, optionally substituted aryl, optionally substituted heteroaryl, optionally substituted amino, optionally substituted hydroxy, optionally substituted thiol, optionally substituted sulfonyl, optionally substituted aminosulfonyl, or optionally substituted carbamoyl, or

R^{11} and R^{12}, R^{14} and R^{15}, and R^{16} and R^{17} may together form "=O";

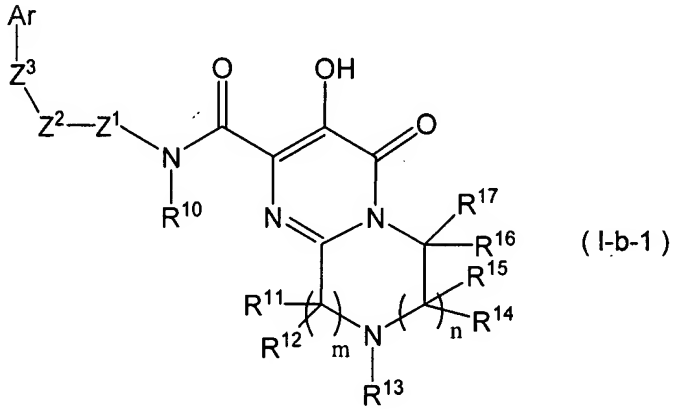
R^{13} is hydrogen, optionally substituted lower alkyl, optionally substituted lower alkylcarbonyl, optionally substituted lower alkylsulfonyl, optionally substituted carbamoyl, optionally substituted arylcarbonyl, optionally substituted aralkyl, optionally substituted heteroaralkyl, or optionally substituted heteroarylcarbonyl;

m is 0, 1, 2 or 3; n is 0, 1, 2 or 3; provided that $1 \leq m+n \leq 3$)),

a pharmaceutically acceptable salt or a solvate thereof.

12. (**Withdrawn**) The compound according to claim 1 of the formula:

[Formula 10]



(I-b-1)

(wherein each symbol is the same meanings as claim 1), a pharmaceutically acceptable salt or a solvate thereof.

13. (**Withdrawn**) The compound according to claim 11, wherein Z^1 is a single bond or O; Z^2 is a single bond or lower alkylene; Z^3 is a single bond; and Ar is optionally substituted phenyl, a pharmaceutically acceptable salt or a solvate thereof.

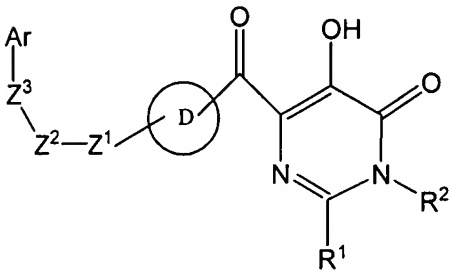
14. (**Withdrawn**) The compound according to claim 11, wherein m is 1, and n is 0 or 1, a pharmaceutically acceptable salt or a solvate thereof.

15. (**Withdrawn**) The compound according to claim 11, wherein R^{11} and R^{12} each is independently hydrogen or lower alkyl; R^{14} and R^{15} both are hydrogens, or together form "=O"; and R^{16} and R^{17} each is independently hydrogen or lower alkyl, a pharmaceutically acceptable salt or a solvate thereof.

16. (**Withdrawn**) The compound according to claim 11, wherein m is 1, n is 0 or 1; R^{11} and R^{12} each is independently hydrogen or lower alkyl; R^{14} and R^{15} both are hydrogens, or together form "=O"; and R^{16} and R^{17} each is independently hydrogen or lower alkyl, a pharmaceutically acceptable salt or a solvate thereof.

17. (**Withdrawn**) The compound according to claim 1 represented by the formula:

[Formula 11]

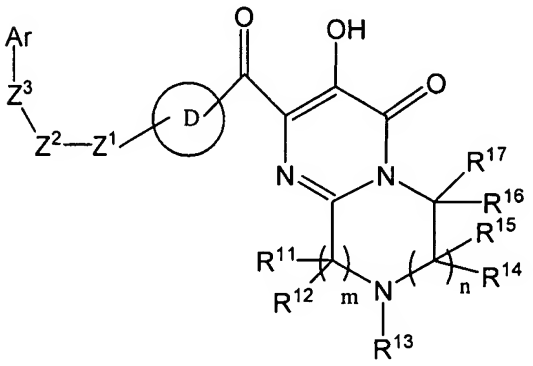


(I-c)

(wherein each symbol is the same meanings as claim 1), a pharmaceutically acceptable salt or a solvate thereof.

18. (**Withdrawn**) The compound according to claim 1 represented by the formula:

[Formula 12]



(I-c-1)

(wherein each symbol is the same meanings as claim 1), a pharmaceutically acceptable salt or a solvate thereof.

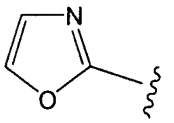
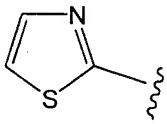
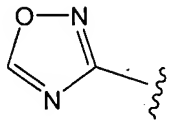
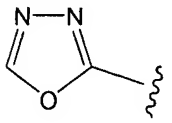
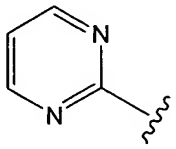
19. (**Withdrawn**) The compound according to claim 17, wherein D ring is furan, a pharmaceutically acceptable salt or a solvate thereof.

20. (**Currently Amended**) A pharmaceutical composition comprising a compound according to claim 1, a pharmaceutically acceptable salt or ~~a solvate~~ an alcoholate or hydrate thereof, and a pharmaceutically acceptable carrier or diluent.

21-22. (**Cancelled**).

23. (**Currently Amended**) The compound according to claim 9, wherein C ring is selected from the group consisting of:

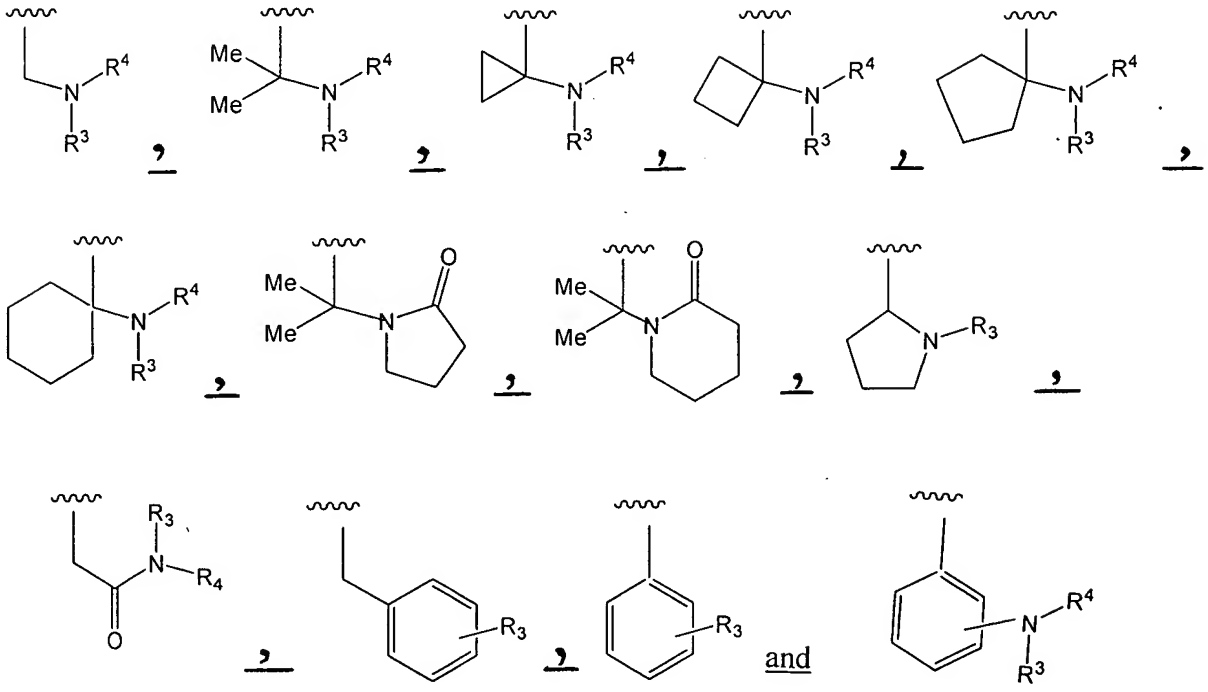
[Formula 7]

and , a pharmaceutically acceptable salt or ~~a solvate~~ an alcoholate or hydrate thereof.

24. (**Currently Amended**) The compound according to claim 9, wherein R^1 is a group selected from the group consisting of:

[Formula 8]



(wherein, R^3 and R^4 are the same meanings as above), a pharmaceutically acceptable salt or a ~~solvate~~ an alcoholate or hydrate thereof.

25. (**Withdrawn**) The compound according to claim 12, wherein Z^1 is a single bond or O; Z^2 is a single bond or lower alkylene; Z^3 is a single bond; and Ar is optionally substituted phenyl, a pharmaceutically acceptable salt or a solvate thereof.

26. (**Withdrawn**) The compound according to claim 12, wherein m is 1, and n is 0 or 1, a pharmaceutically acceptable salt or a solvate thereof.

27. (**Withdrawn**) The compound according to claim 12, wherein R^{11} and R^{12} each is independently hydrogen or lower alkyl; R^{14} and R^{15} both are hydrogens, or together form "=O"; and R^{16} and R^{17} each is independently hydrogen or lower alkyl, a pharmaceutically acceptable salt or a solvate thereof.

28. (**Withdrawn**) The compound according to claim 12, wherein m is 1, n is 0 or 1; R^{11} and R^{12} each is independently hydrogen or lower alkyl; R^{14} and R^{15} both are hydrogens, or together form "=O"; and R^{16} and R^{17} each is independently hydrogen or lower alkyl, a pharmaceutically acceptable salt or a solvate thereof.

29. (**Withdrawn**) The compound according to claim 18, wherein D ring is furan, a pharmaceutically acceptable salt or a solvate thereof.